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Radial Boring Machines

<u>Length</u>	<u>Maximum Bore</u>	<u>Model Number</u>
a. 1,200 mm	50 mm	256
b. 1,200 mm	50 mm	2A56 (improved machine)
Production: 30-40 machines per month		
c. 1 meter	25 mm	do not recall

Production: 50 machines per month. This was a small machine used in tractor repair factories and was a copy of a machine manufactured by the US Hammond Company.

Crankshaft Grinding Machine

<u>Length</u>	<u>Diameter</u>
1,250 mm	150 mm

Production: 25 machines per month. This machine was used to regrind truck and tractor crankshafts on cooperative farms. It was a modification of a German machine manufactured by Kellenberger. The table on the modification was hand operated; on the original German machine the table was automatic.

Design Engineering

3. The factory had its own design department known as the Construction Bureau. It employed 20-30 design engineers and draftsmen. The machines were mostly copies or modifications of foreign machines with a few original designs. One grinding machine [] was an original design, but the design was faulty, and it was produced only briefly. [] was a modification of a German machine built by Colb. [] was an original design based on the Colb machine but having a larger capacity. Radial boring machine Model [] was a copy of a foreign machine [] was a modification of this machine. [] With the exception []

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Parts Production

5. All parts used in the machines were manufactured by the factory except heavy castings. Bases and tables for grinding machines were produced by the Kromatorsk Machine Tool Factory or the Kromatorsk Locomotive Works. The Odessa Machine Tool Factory supplied the heavy castings for boring machines. The foundry at Molotov began production on a limited scale in 1939. It produced heavy castings after 1940 but its production was insufficient to supply the total requirements of the factory.

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Assembly Methods

6. Grinding machines were assembled in batches of ten. There was no conveyORIZED assembly line. Cranes were used in the assembly shop--three small ones and one large one.

War-Time Relocation of the Molotov Plant

7. When the Germans neared Kharkov in March 1942, the factory was ordered to move to Kamara or Ufa in the Urals. [redacted] seven hours to dismantle 60-70 machines and load them on railroad cars for shipment. The machines were not packed or processed for shipment and parts of one machine would be loaded on different trains. [redacted] this careless handling ruined 80% of the machinery. Any machines or material which [redacted] were unable to remove were destroyed.

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Quality of the Machines Produced - Life Span

8. The machines produced were not of uniform quality, although generally, the basic designs were good. This was caused by poor production planning or production coordination which is [redacted] a universal fault in the Soviet industrial system. Parts were not available for machines in the assembly shop and had to be hastily made in the machine shop to meet production schedules. The finished machines were of poor quality because of badly made components. Because of the irregular supply of parts, production either moved slowly or at a rapid pace with long hours of overtime work.
9. [redacted] the "life span" of a machine tool. [redacted] estimate the life span of a well designed grinding machine at 3-5 yrs. A radial boring machine would possibly last longer. A radial boring machine in the Molotov machine shop was in service over six years.

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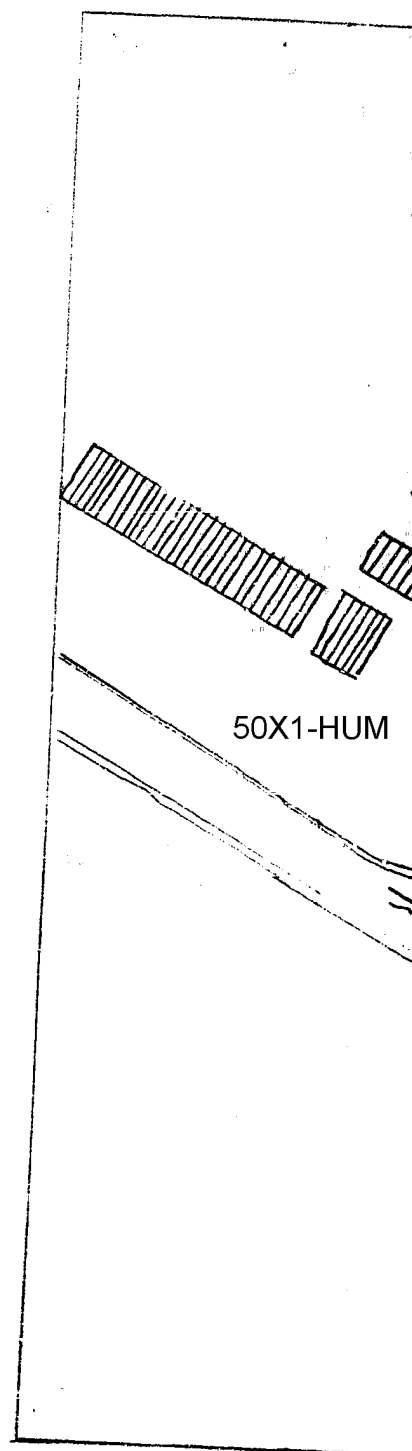
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OVERLAY USAF TARGET MOSAIC- [REDACTED]
[REDACTED]

KHARKOV MACHINE TOOL PLANT
"MOLOTOV", KHARKOV, USSR

- (1) MACHINE SHOP
- (2) ASSEMBLY SHOP
- (3) OFFICE
- (4) HEAVY MACHINE SHOP
- (5) EXPERIMENTAL AND INSTRUMENT SHOP
- (6) POWER STATION
- (7) FOUNDRY
- (8) WAREHOUSE
- (9) KHARKOV TRACTOR FACTORY (X.T.3)
- (10) PROJECTED AIRPLANE FACTORY
(UNDER CONSTRUCTION)



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